

CANADIAN JOURNAL
OF PHYSICS

JOURNAL CANADIEN
DE PHYSIQUE

VOLUME 58, 1980

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¹The permission of the ICSU AB, Paris, for the Canadian Journal of Physics to use this subject classification is gratefully acknowledged.

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- 61.40 Amorphous and polymeric materials
- 61.40D *Glasses*
- 61.40K *Polymers, elastomers, and plastics*
- 61.50 Crystalline state
- 61.50C *Physics of crystal growth*
- 61.50E *Crystal symmetry; models and space groups, and crystalline systems and classes*
- 61.50J *Crystal morphology and orientation*
- 61.50K *Crystallographic aspects of polymorphic and order-disorder transformations*
- 61.50L *Crystal binding*
- 61.55 Specific structure of elements and alloys
- 61.55D *Nonmetallic elements*
- 61.55F *Metallic elements*
- 61.55H *Alloys*
- 61.60 Specific structure: inorganic compounds
- 61.65 Specific structure: organic compounds
- 61.70 Defects in crystals
- 61.70B *Interstitials and vacancies*
- 61.70D *Colour centres*
- 61.70E *Other point defects*
- 61.70G *Dislocations: theory*
- 61.70J *Etch pits, decoration, transmission electron-microscopy and other direct observations of dislocations*
- 61.70L *Slip, creep, internal friction and other indirect evidence of dislocations*
- 61.70N *Grain and twin boundaries*
- 61.70P *Stacking faults, stacking fault tetrahedra, and other planar or extended defects*
- 61.70R *Crystal impurities: general*
- 61.70T *Doping and implantation of impurities*
- 61.70W *Impurity concentration, distribution, and gradients*
- 61.70Y *Interaction between different crystal structure defects*
- 61.80 Radiation damage and other irradiation effects
- 61.80C *X-rays*
- 61.80E *Gamma rays*
- 61.80F *Electrons and positrons*
- 61.80H *Neutrons*
- 61.80J *Ions*
- 61.80L *Atoms and molecules*
- 61.80M *Channelling, blocking and energy loss of particles*
- 61.90 Other topics in structure of liquids and solids
- 62.00 **MECHANICAL AND ACOUSTIC PROPERTIES OF CONDENSED MATTER**
- 62.10 Mechanical properties of liquids
- 62.20 Mechanical properties of solids (related to microscopic structure)
- 62.20D *Elastic constants*
- 62.20F *Deformation and plasticity*
- 62.20H *Creep*
- 62.20M *Fatigue, brittleness, fracture, and cracks*
- 62.20P *Tribology*
- 62.30 Mechanical and elastic waves
- 62.40 Anelasticity, internal friction, and mechanical resonances
- 62.50 High-pressure and shock-wave effects in solids
- 62.60 Acoustic properties of liquids
- 62.65 Acoustic properties of solids
- 62.80 Ultrasonic relaxation
- 62.90 Other topics in mechanical and acoustical properties of condensed matter
- 63.00 **LATTICE DYNAMICS AND CRYSTAL STATISTICS**
- 63.10 General theory
- 63.20 Phonons and vibrations in crystal lattices
- 63.20D *Phonon states and bands, normal modes, and phonon dispersion*
- 63.20H *Phonon-phonon interactions*
- 63.20K *Phonon-electron interactions*
- 63.20M *Phonon-defect interactions*
- 63.20P *Localized modes*
- 63.50 Vibrational states in disordered systems
- 63.70 Statistical mechanics of lattice vibrations
- 63.75 Statistical mechanics of displacive phase-transitions
- 63.90 Other topics in lattice dynamics and crystal statistics
- 64.00 **EQUATIONS OF STATE, PHASE EQUILIBRIA, AND PHASE TRANSITIONS**
- 64.10 General theory of equations of state and phase equilibria
- 64.30 Equations of state of specific substances
- 64.60 General studies of phase transitions
- 64.70 Phase equilibria, phase transitions, and critical points of specific substances
- 64.70D *Solid-liquid transitions*
- 64.70E *Transitions in liquid crystals; glass transitions*
- 64.70F *Liquid-vapour transitions*
- 64.70H *Solid-vapour transitions*
- 64.70J *Liquid-liquid transitions*
- 64.70K *Solid-solid transitions*
- 64.75 Solubility, segregation, and mixing
- 64.80 Other phase properties of systems
- 64.90 Other topics in equations of state, phase equilibria, and phase transitions
- 65.00 **THERMAL PROPERTIES OF CONDENSED MATTER**
- 65.20 Heat capacities of liquids
- 65.40 Heat capacities of solids
- 65.50 Thermodynamic properties and entropy
- 65.70 Thermal expansion and thermomechanical effects
- 65.90 Other topics in thermal properties of condensed matter
- 66.00 **TRANSPORT PROPERTIES OF CONDENSED MATTER (NONELECTRONIC)**
- 66.10 Diffusion and ionic conduction in liquids
- 66.20 Diffusive momentum transport
- 66.30 Diffusion in solids
- 66.30D *Theory of diffusion and ionic conduction in solids*
- 66.30F *Self-diffusion in metals, semimetals, and alloys*

- 66.30H *Self-diffusion and ionic conduction in nonmetals*
 66.30J *Diffusion, migration, and displacement of impurities*
 66.30L *Diffusion, migration, and displacement of other defects*
 66.30N *Chemical interdiffusion*
 66.60 Thermal conduction in nonmetallic liquids
 66.70 Nonelectronic thermal conduction and heat-pulse propagation in nonmetallic solids
 66.90 Other topics in nonelectronic transport properties
- 67.00 **QUANTUM FLUIDS AND SOLIDS: LIQUID AND SOLID HELIUM**
 67.20 Quantum effects on the structure and dynamics of nondegenerate fluids
 67.40 Boson degeneracy and superfluidity of helium-4
 67.50 Fermi fluids; liquid helium-3
 67.60 Mixed systems; liquid helium-3, -4 mixtures
 67.70 Films
 67.80 Solid helium and related quantum crystals
 67.90 Other topics in quantum fluids (e.g. neutron-star matter)
- 68.00 **SURFACES AND INTERFACES: THIN FILMS AND WHISKERS**
 68.10 Fluid surfaces and fluid-fluid interfaces
 68.15 Liquid thin films
 68.20 Solid surface structure
 68.25 Mechanical and acoustical properties of solid surfaces and interfaces
 68.30 Dynamics of solid surfaces and interface vibrations
 68.40 Surface energy of solid; thermodynamic properties
 68.45 Solid-fluid interface processes
 68.48 Solid-solid interfaces
 68.55 Thin film growth, structure, and epitaxy
 68.60 Physical properties of thin films, nonelectronic
 68.70 Whiskers and dendrites; growth, structure, and nonelectronic properties
 68.90 Other topics in the structure and nonelectronic properties of surfaces and thin films
- 70.00 **CONDENSED MATTER: ELECTRONIC STRUCTURE, ELECTRICAL, MAGNETIC, AND OPTICAL PROPERTIES**
 71.00 **ELECTRON STATES**
 71.10 General theories and computational techniques
 71.20 Electronic density of states determinations
 71.25 Nonlocalized single-particle electronic states
 71.25C *Techniques of band-structure calculation (general theory, applications of group theory, analytic continuation, etc.)*
 71.25H *Measurement of Fermi surface parameters*
 71.25J *Effective mass and g-factors*
 71.25L *Electron energy states in liquid metals*
 71.25M *Electron energy states in amorphous and glassy solids*
 71.25P *Band structure of crystalline metals*
 71.25R *Band structure of crystalline elemental semiconductors*
 71.25T *Band structure of crystalline semiconductor compounds and insulators*
 71.30 Metal-insulator transitions
 71.35 Excitons and related phenomena
 71.36 Polaritons
 71.38 Polarons and electron-phonon interactions
 71.45 Collective effects
 71.45G *Exchange, correlation, dielectric and magnetic functions, plasmons*
 71.45J *Fermi-Thomas model*
 71.45N *Calculations of total electronic binding energy*
 71.50 Localized single-particle electronic states
- 71.55 Impurity and defect levels
 71.65 Positron states
 71.70 Level splitting and interactions
 71.70C *Crystal and ligand fields*
 71.70E *Spin-orbit coupling, Zeeman, Stark, and strain splitting*
 71.70G *Exchange interactions*
 71.70J *Nuclear states and interactions*
 71.90 Other topics in electron states
- 72.00 **ELECTRONIC TRANSPORT IN CONDENSED MATTER**
 72.10 Theory of electronic transport; scattering mechanisms
 72.15 Electronic conduction in metals and alloys
 72.15C *Electrical and thermal conduction in amorphous and liquid metals and alloys*
 72.15E *Electrical and thermal conduction in crystalline metals and alloys*
 72.15G *Galvanomagnetic and other magnetotransport effects*
 72.15H *Thermomagnetic effects*
 72.15J *Thermoelectric effects*
 72.15L *Relaxation times and mean free paths*
 72.15N *Collective modes; e.g. in one-dimensional conductors*
 72.15Q *Scattering mechanisms and Kondo effect*
 72.20 Conductivity phenomena in semiconductors and insulators
 72.20D *General theory, scattering mechanisms*
 72.20F *Low-field transport and mobility; piezoresistance*
 72.20H *High-field and nonlinear effects*
 72.20J *Charge carriers: generation, recombination, lifetime, and trapping*
 72.20M *Galvanomagnetic and other magnetotransport effects*
 72.20N *Thermomagnetic effects*
 72.20P *Thermoelectric effects*
 72.30 High-frequency effects; plasma effects
 72.40 Photoconduction and photovoltaic effects; photodielectric effects
 72.50 Acoustoelectric effects
 72.55 Magnetoacoustic effects
 72.60 Mixed conductivity and conductivity transitions
 72.70 Noise processes and phenomena
 72.80 Conductivity of specific semiconductors and insulators
 72.80C *Elemental semiconductors*
 72.80E *III-V and II-VI semiconductors*
 72.80G *Transition-metal compounds*
 72.80J *Other crystalline inorganic semiconductors*
 72.80L *Organic semiconductors*
 72.80N *Amorphous and glassy semiconductors*
 72.80P *Liquid semiconductors*
 72.90 Other topics in electronic transport in condensed matter
- 73.00 **ELECTRONIC STRUCTURE AND ELECTRICAL PROPERTIES OF SURFACES, INTERFACES, AND THIN FILMS**
 73.20 Electronic surface states
 73.25 Surface conductivity
 73.30 Surface double layers, Schottky barriers, and work functions
 73.40 Interfaces
 73.40B *Static electrification*
 73.40G *Tunnelling, general*
 73.40J *Metal-to-metal contacts*
 73.40L *Semiconductor-to-semiconductor contacts, p-n junctions, and heterojunctions*
 73.40M *Semiconductor-electrolyte contacts*
 73.40N *Metal-nonmetal contacts*

- 73.40Q *Metal-insulator-semiconductor structures*
 73.40R *Metal-insulator-metal structures*
 73.40S *Metal-semiconductor-metal structures*
 73.60 Electronic properties of thin films
 73.60D *Metallic thin films*
 73.60F *Semiconductor films*
 73.60H *Insulating thin films*
 73.60K *Superconducting films*
 73.90 Other topics in electrical properties of surfaces, interfaces, and thin films
- 74.00 **SUPERCONDUCTIVITY**
 74.10 Occurrence, critical temperature
 74.20 Theory
 74.20F *BCS theory and its applications*
 74.30 General properties
 74.30C *Magnetization curves, Meissner effect, penetration depth*
 74.30E *Thermodynamic properties; thermal conductivity*
 74.30G *Response to electromagnetic fields, nuclear magnetic resonance, ultrasonic attenuation*
 74.40 Fluctuations and critical effects
 74.50 Proximity effects, tunnelling phenomena, and Josephson effect
 74.55 Type-I superconductivity
 74.60 Type-II superconductivity
 74.60E *Mixed state, H_{c2} surface sheath*
 74.60G *Flux pinning; fluxon-defect interactions*
 74.60J *Critical currents*
 74.70 Superconducting materials
 74.70D *Material effects on T_c , K , critical currents*
 74.70G *Type-I superconductors (non-transition metals)*
 74.70L *Type-II superconductors (transition metals, alloys and compounds)*
 74.70N *Dirty superconductors*
 74.70P *Materials for high-field applications*
 74.90 Other topics in superconductivity
- 75.00 **MAGNETIC PROPERTIES AND MATERIALS**
 75.10 General theory and models of magnetic ordering
 75.10D *Crystal-field theory and spin Hamiltonians*
 75.10H *Ising and other classical spin models*
 75.10J *Heisenberg and other quantized localized spin models*
 75.10L *Band and itinerant models*
 75.20 Diamagnetism and paramagnetism
 75.20C *Nonmetals*
 75.20E *Metals and alloys*
 75.20H *Local moment in dilute alloys; Kondo effect*
 75.25 Spin arrangements in magnetically ordered materials (neutron studies, etc.)
 75.30 Magnetically ordered materials, other intrinsic properties
 75.30C *Saturation moments and magnetic susceptibility*
 75.30D *Spin waves*
 75.30E *Exchange and superexchange interactions*
 75.30G *Anisotropy*
 75.30H *Magnetic impurity interactions*
 75.30K *Magnetic phase boundaries*
 75.30S *Magnetocaloric effect*
 75.40 Critical-point effects, specific heats, short-range order
 75.50 Studies of specific magnetic materials
 75.50B *Ferromagnetism of Fe and its alloys*
 75.50C *Ferromagnetism of other metals*
 75.50D *Ferromagnetism of nonmetals*
 75.50E *Antiferromagnetics*
 75.50G *Ferrimagnetics*
 75.50K *Amorphous magnetic materials*
 75.50M *Magnetic liquids*
 75.60 Domain effects, magnetization curves, and hysteresis
- 75.60C *Domain walls and domain structure*
 75.60E *Magnetization curves, hysteresis, Barkhausen and related effects*
 75.60G *High coercivity materials*
 75.60J *Fine-particle systems*
 75.60L *Magnetic aftereffects*
 75.60N *Magnetic annealing and temperature-hysteresis effects*
 75.70 *Magnetic films and plates*
 75.70K *Domain structure (magnetic bubbles)*
 75.80 Magnetomechanical and magnetoelectric effects, magnetostriction
 75.90 Other topics in magnetic properties and materials
- 76.00 **MAGNETIC RESONANCES AND RELAXATION IN CONDENSED MATTER: MOSSBAUER EFFECT**
 76.20 General theory of resonances and relaxation
 76.30 Electron spin resonance and relaxation
 76.30D *Ions and impurities: general*
 76.30F *Iron group (3d) ions and impurities (Ti-Cu)*
 76.30H *Platinum and palladium group (4d and 5d) ions and impurities (Zr-Ag and Hf-Au)*
 76.30K *Rare-earth ions and impurities*
 76.30M *Colour centres and other defects*
 76.30P *Conduction electrons*
 76.30R *Free radicals*
 76.40 Diamagnetic and cyclotron resonances
 76.50 Ferromagnetic, antiferromagnetic, and ferrimagnetic resonances; spin wave resonance
 76.60 Nuclear magnetic resonance and relaxation
 76.60C *Chemical and Knight shifts*
 76.60E *Relaxation effects*
 76.60G *Quadrupole resonance*
 76.60L *Spin echoes*
 76.70 Magnetic double resonances and cross effects
 76.70D *Electron-nuclear double resonance (ENDOR)*
 76.70E *Dynamical nuclear polarization*
 76.70F *Double nuclear magnetic resonance (DNMR)*
 76.70H *Optical double magnetic resonance (ODMR)*
 76.70K *Electron double resonance (ELDOR)*
 76.80 Mossbauer effect; other gamma-ray spectroscopy
 76.90 Other topics in magnetic resonances and relaxation
- 77.00 **DIELECTRIC PROPERTIES AND MATERIALS**
 77.20 Permittivity
 77.30 Polarization and depolarization effects
 77.40 Dielectric loss and relaxation
 77.50 Dielectric breakdown and space-charge effects
 77.55 Dielectric thin films
 77.60 Piezoelectricity and electrostriction
 77.70 Pyroelectric and electrocaloric effects
 77.80 Ferroelectricity and antiferroelectricity
 77.80B *Transitions and Curie point*
 77.80D *Domain structure and effects; hysteresis*
 77.85 Electrical resonances
 77.90 Other topics in dielectric properties and materials
- 78.00 **OPTICAL PROPERTIES AND CONDENSED MATTER SPECTROSCOPY AND OTHER INTERACTIONS OF MATTER WITH PARTICLES AND RADIATION**
 78.20 Optical properties and materials
 78.20B *General theory (for pure homogeneous materials)*
 78.20D *Optical constants and parameters*
 78.20E *Optical rotatory power*
 78.20F *Birefringence*
 78.20H *Piezo-, elasto- and acousto-optical effects*
 78.20J *Electro-optical effects*
 78.20L *Magneto-optical effects*
 78.20N *Thermo-optical effects*

- 78.30 Infrared and Raman spectra and scattering
 78.35 Brillouin and Rayleigh scattering
 78.40 Visible and ultraviolet spectra
 78.45 Stimulated emission
 78.50 Impurity and defect absorption in solids
 78.55 Photoluminescence
 78.60 Luminescence spectra and radiative recombination
 78.60F Electroluminescence
 78.60H Cathodoluminescence, ionoluminescence
 78.60K Thermoluminescence
 78.60M Sonoluminescence, triboluminescence
 78.60P Chemiluminescence
 78.65 Optical properties of thin films
 78.70 Other interactions of matter with particles and radiation
 78.70B Positron annihilation
 78.70C X-ray scattering
 78.70D X-ray absorption and absorption edges
 78.70E X-ray emission threshold and fluorescence
 78.70G Microwave and radiofrequency spectra
 78.90 Other topics in optical properties of condensed matter and other interactions of matter with particles and radiation
- 79.00 ELECTRON AND ION EMISSION BY LIQUIDS AND SOLIDS: IMPACT PHENOMENA
 79.20 Impact phenomena
 79.20D Laser-light impact phenomena
 79.20F Electron impact: Auger emission
 79.20H Electron impact: secondary emission
 79.20K Other electron impact phenomena
 79.20N Atom, molecule, and ion impact
 79.20R Atomic and molecular beam interactions
 79.40 Thermionic emission
 79.60 Photoemission and photoelectron spectra
 79.70 Field emission and field ionization
 79.75 Exoelectron emission
 79.80 Resonance tunnelling
 79.90 Other topics in emission and impact phenomena in condensed matter
- 80.00 CROSS-DISCIPLINARY PHYSICS AND RELATED AREAS OF SCIENCE AND TECHNOLOGY
- 81.00 MATERIALS SCIENCE
 81.10 Methods of crystal growth and purification
 81.10B Growth from vapour
 81.10D Growth from solutions
 81.10F Growth from melts
 81.10H Zone melting and zone refining
 81.10J Growth from solid phases
 81.15 Methods of thin film depositions
 81.15C Deposition by cathodic sputtering
 81.15G Vacuum deposition
 81.15H Chemical vapour deposition
 81.15J Ion plating and other vapour deposition
 81.15L Deposition from liquid phases (melts and solutions)
 81.20 Other methods of preparation of materials
 81.20C Vacuum methods
 81.20E Powder techniques, compaction and sintering
 81.20G Specific metals and alloys (compacts, pseudoalloys)
 81.20J Dispersion-, fibre- and platelet-reinforced metal-based composites
 81.20L Ceramics and refractories
 81.20N Cermets, ceramic and refractory composites
 81.20P Glasses
 81.20Q Glass-based composites, vitroceraamics
 81.20S Polymers
- 81.20T Reinforced polymers and polymer-based composites
 81.30 Phase diagrams and microstructures developed by solidification and solid-solid phase transformations
 81.30B Phase diagrams of metals and alloys
 81.30D Phase diagrams of other materials
 81.30F Solidification (any material)
 81.30H Constant-composition solid-solid phase transformations: polymorphic, massive, order-disorder (any material)
 81.30K Martensitic transformations (any materials)
 81.30M Precipitation (any material)
 81.40 Treatment of materials and its effects on microstructures and properties
 81.40C Solid solution hardening, precipitation hardening, dispersion hardening
 81.40E Cold working, work hardening; annealing, recovery and recrystallisation; textures
 81.40G Other heat and thermomechanical treatments
 81.40J Elasticity and anelasticity
 81.40L Deformation, plasticity and creep
 81.40N Fatigue, embrittlement, and fracture
 81.40P Friction, lubrication, and wear
 81.40R Electrical and magnetic properties (related to treatment conditions)
 81.40T Optical properties (related to treatment conditions)
 81.60 Corrosion, oxidation and surface treatments
 81.60B Metals and alloys: dry and electrochemical corrosion
 81.70 Materials testing
 81.90 Other topics in materials science
- 82.00 PHYSICAL CHEMISTRY
 82.20 Chemical kinetics
 82.20K Potential energy surfaces for chemical reactions
 82.20M Nonequilibrium kinetics
 82.20R Energy distribution and transfer, relaxation
 82.30 Specific chemical reactions; reaction mechanisms
 82.35 Polymer reactions and polymerization
 82.40 Chemical kinetics and reactions: special regimes
 82.40D Atomic and molecular beam reactions
 82.40T Chemiluminescence and chemical laser kinetics
 82.45 Electrochemistry and electrophoresis
 82.50 Photochemistry and radiation chemistry
 82.50E Photodissociation, photoionization as studied by luminescence and radiationless transitions and intersystem crossing
 82.55 Radiochemistry
 82.60 Chemical thermodynamics
 82.65 Surface processes
 82.70 Disperse systems
 82.80 Chemical analysis and related physical methods of analysis
 82.90 Other topics in physical chemistry
- 86.00 ENERGY RESEARCH AND ENVIRONMENTAL SCIENCE
 86.10 Energy resources and their utilisation
 86.10B Fossil and other fuels
 86.10D Wind energy
 86.10F Tidal and flow energy
 86.10H Geothermal energy
 86.10K Solar energy
 86.10Z Other topics
 86.30 Energy conversion
 86.30D Electrochemical conversion: general
 86.30E Primary cells
 86.30F Secondary cells
 86.30G Fuel cells
 86.30J Photoelectric conversion: solar cells and arrays

86.30K	Photoelectrochemical conversion	87.60J	Corpuscular radiation and radioisotopes
86.30L	Electrostatic and magnetohydrodynamic conversion	87.60L	Preparation of radioactive materials for medical and biomedical uses
86.30M	Thermoelectric conversion	87.60M	Radiation dosimetry
86.30N	Thermionic conversion	87.60P	Radiation protection
86.30P	Photosynthesis	87.60R	Radioactive pollution
86.30Q	Chemical energy conversion	87.65	Aerospace bio- and medical physics (effects of accelerations, weightlessness and environment)
86.30R	Thermal energy conversion (heat engines and heat pumps)	87.70	Biomedical engineering
86.30S	Photothermal conversion	87.70E	Diagnostic methods and instrumentation
86.30Z	Other topics	87.70G	Patient care and treatment
86.45	Energy storage (secondary energy)	87.70J	Prosthetics and other practical applications
86.40C	Storage in mechanical energy	87.80	Biophysical instrumentation and techniques
86.40F	Storage in thermal energy	87.90	Other topics in biophysics, medical physics, and biomedical engineering
86.40H	Storage in chemical energy		
86.40K	Hydrogen storage and technology		
86.40Z	Other topics	90.00	GEOPHYSICS, ASTRONOMY AND ASTROPHYSICS
86.60	Requirement for energy: ecological aspects		
86.70	Environmental science	91.00	SOLID EARTH GEOPHYSICS
86.70C	Soil	91.10	Geodesy and gravity
86.70E	Water	91.25	Geomagnetism and palaeomagnetism; geoelectricity
86.70G	Atmosphere	91.30	Seismology
86.70J	Noise	91.35	Earth's interior structure and properties
86.70L	Measurement techniques in environmental science	91.40	Volcanology
86.70Z	Other topics	91.45	Physics of plate tectonics
86.90	Other topics in energy research and environmental science	91.50	Marine geology and geophysics
		91.60	Physical properties of rocks and minerals
		91.65	Geophysical aspects of geology, mineralogy and petrology
87.00	BIOPHYSICS, MEDICAL PHYSICS, AND BIOMEDICAL ENGINEERING	91.90	Other topics in solid Earth geophysics
87.10	General, theoretical, and mathematical biophysics	92.00	HYDROSPHERIC AND ATMOSPHERIC GEOPHYSICS
87.15	Molecular biophysics	92.10	Physics of the oceans
87.15B	Structure, configuration, conformation, and active sites at the biomolecular level	92.20	Interdisciplinary aspects of oceanography
87.15M	Interactions with radiations at the biomolecular level	92.20N	Marine pollution
87.16	Biothermics	92.40	Hydrology and glaciology
87.20	Membrane biophysics	92.60	Meteorology
87.25	Cellular biophysics	92.60S	Climatology
87.25D	Biological transport; cellular and subcellular transmembrane physics	92.60T	Air quality and air pollution
87.30	Biophysics of neurophysiological processes	92.65	Atmospheric optics
87.30E	External and internal data communications, nerve conduction and synaptic transmission	92.90	Other topics in hydrospheric and atmospheric geophysics
87.32	Physiological optics, vision	93.00	GEOPHYSICAL OBSERVATIONS, INSTRUMENTATION, AND TECHNIQUES
87.32C	Anatomy and optics of eye	93.30	Information related to geographical regions
87.32E	Physiology of the eye; nerve structure and function	93.55	International organizations, national and international programs
87.32L	Light detection; adaptation and discrimination	93.65	Data acquisition and storage
87.32N	Colour detection; adaptation and discrimination	93.85	Instrumentation and techniques for geophysical research
87.32S	Psychophysics of vision, visual perception, binocular vision		
87.34	Audition	94.00	AERONOMY AND SPACE PHYSICS
87.36	Speech	94.10	Physics of the neutral atmosphere
87.38	Mechano- and chemio-ceptions	94.10Q	Airglow and nightglow
87.40	Biomagnetism	94.10S	Aurora
87.45	Biomechanics, biorheology, biological fluid dynamics	94.20	Physics of the ionosphere
87.50	Biological effects of radiations	94.30	Physics of the magnetosphere
87.50C	Bioacoustics (sonic and ultrasonic effects on living matter)	94.40	Cosmic rays
87.50E	Bio-optics (effects of microwaves, light, laser and other electromagnetic waves)	94.40C	Origin and propagation outside the solar system
87.50G	Ionizing radiations (u.v., X-ray, gamma-ray; particle radiation effects)	94.40E	Interplanetary propagation and effects
87.60	Medical and biomedical uses of fields, radiations, and radioactivity	94.40H	Energetic solar particles and photons
87.60B	Sonic and ultrasonic radiation	94.40K	Solar modulation and geophysical effects
87.60D	Electric and magnetic fields (d.c. and pulsed)	94.40L	Composition and energy spectra
87.60G	Laser beams, microwaves, and other electromagnetic waves	94.40N	Extensive air showers
		94.40R	High-energy interactions
		94.40T	Muons and neutrinos
		94.40V	Cosmic-ray effects in meteorites and terrestrial matter
		94.60	Interplanetary space
		94.80	Aerospace facilities and techniques; space research

- 94.90 Other topics in space physics
- 95.00 FUNDAMENTAL ASTRONOMY AND ASTROPHYSICS, INSTRUMENTATION AND TECHNIQUES AND ASTRONOMICAL OBSERVATIONS
- 95.10 Fundamental astronomy
- 95.10C *Celestial mechanics*
- 95.30 Fundamental aspects of astrophysics
- 95.30E *Atomic and molecular processes and interactions*
- 95.45 Observatories
- 95.55 Astronomical instruments
- 95.65 Auxiliary and recording instruments
- 95.70 Other instrumentation and techniques
- 95.75 Techniques of observation and reduction
- 95.80 Astronomical observations (listed by techniques of observation)
- 95.80D *Radio and radar*
- 95.80G *Far infrared (bolometric, photoconductive)*
- 95.80J *Photographic region (near infrared, visible, and normal ultraviolet)*
- 95.80M *Space ultraviolet*
- 95.80N *X-ray*
- 95.80Q *Gamma-ray and elementary particle*
- 95.80S *Other (including gravitational radiation, magnetograms, etc.)*
- 95.85 Catalogues, atlases, etc.
- 95.90 Other topics in astronomy and astrophysics
- 96.00 SOLAR SYSTEM
- 96.10 General, solar nebula, and cosmogony
- 96.20 Moon
- 96.30 Planets and satellites
- 96.30D *Mercury*
- 96.30E *Venus*
- 96.30G *Mars*
- 96.30H *Asteroids*
- 96.30K *Jupiter*
- 96.30M *Saturn*
- 96.30T *Other planets*
- 96.50 Other objects in the planetary system
- 96.50D *Interplanetary matter, magnetic and electric fields*
- 96.50G *Comets*
- 96.50K *Meteors, showers, and meteoroids*
- 96.50M *Meteorites, micrometeorites*
- 96.60 Solar physics
- 96.90 Other topics on the solar system
- 97.00 STARS
- 97.10 Stellar characteristics
- 97.20 Normal stars (by class): general or individual
- 97.30 Variable and peculiar stars
- 97.60 Late stage of stellar evolution
- 97.60B *Supernovae*
- 97.60G *Pulsars*
- 97.60J *Neutron stars*
- 97.60L *Black holes*
- 97.80 Binary and multiple stars
- 97.90 Other topics in stellar astronomy
- 98.00 STELLAR SYSTEMS: GALACTIC AND EXTRAGALACTIC OBJECTS AND SYSTEMS; THE UNIVERSE
- 98.10 Stellar dynamics
- 98.20 Stellar clusters and associations
- 98.40 Interstellar matter; and nebulae
- 98.50 The Galaxy, extragalactic objects and systems
- 98.50K *Groups, clusters, superclusters*
- 98.70 Other objects and background radiations of unknown origin and distances
- 98.70D *Discrete radio sources*
- 98.70J *Quasars*
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